



Centaur 50th Anniversary Engineering Design Challenge “Pushing the Limits”

Definitions:

Challenge Field Map – A 5' x 12' playing field with a specified “Launching Site”, “Mid-point area”, and “Rendezvous Point” (Bulls-eye area).

Design Engineer – A designated person who takes responsibility to work out the structure or form of something, as by making a sketch, outline, pattern, or plans with the input of his/ her team members.

Energize – To prepare the propulsions system by filling a rubber balloon/s with the proper amount of air to transport the vehicle and payload to a desired point on the field map.

Payload- The load carried by a vehicle exclusive of what is necessary for its operation. The payload for this design challenge will be a 3-ounce paper Dixie cup filled with any type of paperclips but with a specified total weight of 25 grams.

Propellant Container – A rubber balloon of any size, shape or length.

Launch Site – Location where air-propelled vehicle will start its journey.

Mechanism - A system of parts that operate or interact like those of a machine.

Mid-point Area – An open area on field map where vehicle will need to make its directional correction prior to being propelled to the Rendezvous Point.

Operations Engineer- A designated person who takes responsibility to setup and operate any mechanical or electrical systems required to complete a process.

Rendezvous Point – The final location where the air-propelled vehicle needs to end its journey. The rendezvous point will contain a three-ringed bulls-eye target that will determine how many points a team will receive depending on where the center of their payload lines up with the bulls-eye rings.

Research Engineer- A designated person who takes responsibility to improve and develop various products and/or processes after performing research on past and present methods of similar or new concepts.

Technical Engineer- A designated person who takes responsibility to assemble, maintain, repair or modify mechanical or electrical components of the overall system.

Writing Engineer- A designated person who takes responsibility to collect data, to capture details about the data, create an outline for the work to be presented, and to work with the input provided by his/ her team members.